

## **Spontaneous arousability in prone and supine position in healthy infants.**

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**Study Objective:** Compared with control infants, those who will be future victims of sudden infant death syndrome (SIDS) show a decreased arousability during sleep, with fewer cortical arousals and more-frequent subcortical activations. These findings suggest an incomplete arousal process in victims of SIDS. Prone sleep position, a major risk factor for SIDS, has been reported to reduce arousal responses during sleep. The present study was undertaken to evaluate whether the prone sleep position impairs the arousal process in healthy infants.

**Methods:** Twenty-four healthy infants were studied polygraphically during 1 night; 12 infants regularly slept supine and 12 infants regularly slept prone. Infants were matched for sex, gestational age, and age at recording. Arousals were differentiated into subcortical activations or cortical arousals, according to the presence of autonomic and/or electroencephalographic changes. Frequencies of subcortical activations and cortical arousals were compared in the prone- and the supine-sleeping infants.

**Results:** Compared with supine sleepers, prone sleepers had significantly fewer cortical arousals during rapid eye movement (REM) sleep ( $p = .043$ ). There were no significant differences in cortical arousals between the 2 groups during non-REM sleep. No significant differences were seen in the frequencies of subcortical activations during both REM and non-REM sleep between supine and prone sleepers. The ratio of cortical arousal to subcortical activation showed no significant differences between the prone and the supine sleepers.

**Conclusions:** Prone sleep position decreased the frequency of cortical arousals but did not change the frequency of subcortical activations, as has been previously found in SIDS victims. These results suggest specific pathways for impairment of the arousal process in SIDS victims.